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OUR REF: 8479/21

YOUR REF: KK

DATE: 29th August 2022.

Mr. Kevin Keating,
John O'Neill & Associates
Architects & Interior Designers
1 Irishtown Road,
Dublin 4.

kevin@jona.ie

Re: Mixed development consisting of 1 public house and 26 apartments at The Finches Public House.

Dear Mr. Keating,

In relation to the above proposed project, I attended at Finches on 10th December 2021, just after 06:00 hours, and conducted acoustical measurements to assess the existing night-time level (on the basis of 15 minute pre-07:00 intervals) and the existing daytime levels on the basis of post-07:00 hours 15-minute levels. The instrumentation used was a Brüel & Kjær 2250 Analyzer, in NSAI certification and calibrated prior to, and at the conclusion of, the measurements. No drift occurred. The microphone was suitably boomed up overground and the appropriate windshield was in place.

The tests were attended tests and a note of the type of ambient noise sources, mainly traffic on the existing roadways, was kept. Weather conditions were cold and damp with a North-West wind varying between 1.5 m/s and occasional gusts up to 4.0m/s.

The drawings and plans of the proposed development have been studied and this report sets out the current ambient noise sources, the likely noise during construction, the likely noise associated with use of the public house/bistro and the measures required to ensure that reasonable in-room noise levels in respect of the overhead and adjacent apartments are achieved and maintained when the development is completed.

1. EXISTING AMBIENT NOISE LEVELS.

1.1. The existing ambient noise levels are mainly due to through traffic in this vicinity. This included buses, HGV's, construction vehicles, motor-cycles, mopeds and delivery lorries. The acoustical metrics noted included:

- 15-minute $L_{A,Eq}$, sometimes called the "decibel average" and expressed in A-weighted decibels, denoted dB(A),
- 15-minute L_{AF10} , being that level exceeded for 10% of the measured time. It, too, is expressed in dB(A),
- 15-minute L_{AF90} , being that level exceeded for 90% of the measured period. It is expressed in dB(A),
- L_{AFmax} ; this is the single noisiest event during the particular 15-minute period as assessed under the fast (0.125 second) time constant. It is expressed in dB(A),
- L_{ASmax} ; this is the single noisiest event during the particular 15-minute period as assessed under the slow (1 second) time constant. It is expressed in dB(A).

These metrics, as is good practice, are set out correct to the nearest integer (whole number).

1.2. The night-time 15-minute intervals yielded the following results:

Time	L _{Aeq}	L _{AF10}	L _{AF90}	L _{AFmax}	L _{ASmax}
06:15 – 06:30	62	65	50	80	78
06:30 – 06:45	61	65	53	73	71
06:45 – 07:00	62	65	54	76	75

1.3. The day-time 15-minute intervals yielded the following results:

Time	L _{Aeq}	L _{AF10}	L _{AF90}	L _{AFmax}	L _{ASmax}
07:00 – 07:15	62	65	54	73	72
07:15 – 07:30	61	65	53	73	71
07:30 – 07:45	64	67	55	84	80
07:45 – 08:00	64	67	58	78	73
08:00 – 08:15	65	68	58	80	75
08:15 – 08:30	65	68	60	75	73
08:30 – 08:45	66	68	61	82	81
08:45 – 09:00	66	68	62	84	79

1.4. The above data indicates that this location is currently exposed to high levels of traffic noise, most likely in excess of the current target arrival level L_{DEN} 60 dB(A).

2. PROBABLE CONSTRUCTION NOISE LEVELS

- 2.1. The construction noise levels at the nearest noise sensitive receptor will require to be controlled so as to avoid unnecessary disturbance. The good practices of British Standard BS 5228 Code of Practice for Noise and Vibration control on construction and open sites, pt 1, Noise, will be firmly applied.
- 2.2. A designated liaison person will be appointed to liaise with residents' groups representatives, keeping them informed of progress and ensuring that concerns and issues arising with construction (including materials delivery scheduling) are dealt with expeditiously and in a non-confrontational fashion.
- 2.3. A noise log – derived from noise monitoring - is to be kept with weekly data being made available to the resident's groups representatives. Any exceedance arising will be addressed and appropriate action taken to avoid a repetition.
- 2.4. Working hours (including deliveries of materials) will not commence before 07:00 hours nor extend after 19:00 hours, Monday to Friday. Restrictions will apply to Saturdays and Bank Holidays – the permitted working hours being 09:00 hours until 15:00 hours. No Sunday work is permitted. While site meetings may occur outside these times, no machinery or powered equipment is to be operated outside these times This includes hammering or other manual activities likely to give to impulsive and potentially disturbing noise.
- 2.5. The measured 1-hour L_{AEQ} level arising from construction activities, Monday to Friday, at the nearest sensitive façade, shall not exceed 70 dB(A). The L_{ASmax} during this period shall not exceed 80 dB(A). Saturday 1-hour L_{AEQ} limits shall be 60 dB(A) and, in the case of the L_{ASmax}, 70 dB(A).

3. POTENTIAL NOISE IMPACT OF PUBLIC HOUSE

- 3.1. There are a number of potential noise impacts from the public house with respect to overhead and adjacent apartments. The first of these relates to deliveries of kegs, crates and the like. No deliveries are to occur before 07:00 hours or after 21:00 hours.
- 3.2. Bottle sorting is a potentially noisy activity and is only to be carried out after 07:00 hours Monday to Friday and after 10:00 hours Saturday and Sunday. No sorting is to be carried out after 21:00 hours. Bottle collection shall be arranged between these times.
- 3.3. Deliveries of kegs shall be arranged in locations with heavy duty rubber mats which, in addition to the normal dump sacks, will control the impact noise of this type of delivery. Kegs

shall be rolled on such mats and the cool/chill room will have floors and walls lined with this material.

- 3.4. While this pub is not suited towards amplified music, background music may be played subject to the music level not exceeding a level of 80 dB(A) at a point 1m in front of the speakers, the relevant duration being a 5-minute reference period. Similar levels will apply should non-amplified music be arranged. The installation, set up and calibration of a suitable limiting device shall be carried out prior to opening and confirmed prior to the annual Licensing Renewal. These levels and conditions will also apply should a television screen (or similar projector) be installed or should an in-house public address system (whether permanent or temporary) be availed of.
- 3.5. All doors will be fitted with efficient door closure devices (DCD's) which will remain operational during normal licensing hours. This will minimise the degree of patron noise break-out and possible flanking to attain the windows of the overhead and most proximate apartments.
- 3.6. The floors where patrons pass in the pub – to include the bar and lounge areas, the seating area, the tabled area, the access routes and toilet area shall be treated with a top-quality underfloor insulation material, to be installed strictly in accordance with the manufacturer's instructions. Good results have been obtained with a product called *MuteMat* sourced from the UK. The results have demonstrated a significant reduction of footfall impact being transmitted into masonry structures and being re-radiated in neighbouring partitions.
- 3.7. The floor areas where staff work are to be fitted with similar insulation product to the patron areas, with additional rubber matting laid on same to deaden the sound of keg, crate or similar material movement.
- 3.8. The ceiling is to be a false ceiling of double slabbed, staggered and offset differing thickness plasterboards secured onto resilient bars, themselves secured via appropriate insulated brackets to the overhead structure. Penetrations through same are to be kept a minimum and such as are permitted must include the maximum degree of additional insulation to minimise sound passage through same.
- 3.9. Ducting for extract and fresh air admission must be lagged and not touch the underside of the ceiling structure. Hanger brackets must be of the insulated type so as not to compromise the double layer protection afforded by the ceiling.
- 3.10. Internal walls are to comprise similar double slabbed, staggered and offset plaster board. Electrical conduits, lighting and similar fittings are to be surface mounted with minimum penetration of the surface and where such penetration is unavoidable the item shall be sealed into the existing double board with suitable semi-setting acoustic mastic.

4. RECOMMENDED ACOUSTIC CONTROL MEASURES.

- 4.1. The ambient noise measurements indicate that this location is subject to relatively high existing noise levels, both during the daytime and the night-time. The most sensitive rooms in the overhead and adjacent apartments are the bedrooms. These rooms will need additional specification from the external noise, in particular the night time levels in terms of the 8-hour (night-time) L_{Aeq} , L_{AFmax} and L_{ASmax} .
- 4.2. Additionally, bedrooms require fresh air admission during the night. The "good" in-bedroom level - when assessed over an 8-hour night time period (i.e., from 23:00 to 07:00 hours) is 30 dB(A). Conventional trickle vents on double or triple glazed windows are unlikely to provide sufficient attenuation to the night-time levels and therefore a specialist acoustic wall vent is required. Good results have been obtained with a device manufactured by ICAN called the *Fresh 90dB Wall Vent*. Such a device is likely to suitably reduce the in-bedroom arrival level of external traffic noise L_{AFmax} to 45 dB(A) and the arrival level of L_{ASmax} to 42 dB(A).
- 4.3. The apartments will also require treatment with MuteMat (or comparable product) to ensure that impact transmission (footfall) is suitably reduced between apartments and to enable the necessary acoustic testing - on completion - to comply with current Building Requirements. The MuteMat must be kept in place and the subsequent management Company rules must stipulate its presence for all owners/occupiers.
- 4.4. Good quality DCD's and soft closing must be a maintained feature of each apartments hall door and indeed the main (security) access door into the lobby.

- 4.3. Chillers, condensers and similar plant associated with the cold room and fresh air provision shall be mounted on suitable vibration isolating brackets to minimize and energy transfer into the structure. These details, in addition to those specified in 3) above are required to ensure that patron conduct, even at times of ebullience and celebration, do not intrude inappropriately into the night-time in-bedroom conditions of the apartments, particularly those directly over the pub.
- 4.4. A sophisticated security system with CCTV of the entrances and inner areas of the pub is to be installed both for the safety of patrons and staff but also to let patrons know that their conduct, especially at and after closing time, is a matter of record and concern to the pub management.

The measures set out above are practical – but necessary – to achieve proper in-bedroom sound levels in the overhead/adjacent apartments while enabling the pub/bistro to operate in a commercially viable fashion.

Yours sincerely,

Karl Searson

Chartered Engineer.